

portions having a first contact area and a first profile, and each of the first base portions being generally cylindrical with a diameter;

- (d) each of the second inserts having a second base portion mounted to the bit head and a second exposed portion extending from the bit head, each of the second exposed portions having a second profile that is appreciably different than the first profile and having a second contact area that is appreciably larger than the first contact area, and each of the second base portions being generally cylindrical with a diameter that is appreciably larger than the diameter of the first base portion, at least some of the second exposed portions enhanced with a superhard material.

REMARKS

Reconsideration of this application as amended is respectfully requested. Claims 1 – 69 and 71 are pending in this application. Claims 1, 26, and 50 have been amended.

Claims Rejection – 35 U.S.C. §103(a)

The Examiner has rejected the claims under 35 U.S.C. §103(a) as being anticipated by Palmberg, in view of Keshevan or Hedlund, Skidmore in view of Keshevan or Hedlund, and Isakov, in view of Keshevan or Hedlund. Applicants respectfully traverse these rejections.

Applicants have amended Claims 1, 26, and 50 to include the limitations with respect to the first and second profiles of the exposed portion of the first and second inserts. Applicants submit that these claims as amended are not disclosed in any of the cited references, individually, or in combination with other references. The advantage of using inserts that are differently sized and shaped, at least some of which are enhanced with a superhard material, is not obvious.

Claims 1, 26, and 50 are distinguishable over Isakov, Palmberg, and Skidmore at least because each claim requires that each of the second inserts have a second exposed portion with a

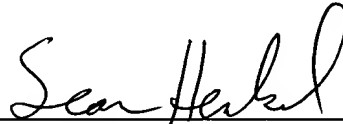
second profile that is appreciably different from the first profile of the first inserts' exposed portions. In contrast, according to the cited references, the profiles of the "first and second" insert appear identical. (Figure 2 of Palmberg, Figures 1 and 5 of Skidmore, and Figure 7 of Isakov). Thus, the cited references fail to teach or suggest a percussion drill bit having a first set of inserts with a first profile and first contact area, and a second set of inserts with a second profile that is appreciably different from the first profile and a second contact area that is appreciable different from the first contact area, as required by amended claims 1, 26, and 50.

Claims 2-25, 27-49, 51-69, and 71 are dependent on claims 1, 26, and 50. Therefore, the allowability of these claims is also asserted at least based on the above arguments. Further, with respect to rejected claims 23-25 and 47-49, the cited reference fail to teach or suggest that the second profiles are different from the first profiles such that the second inserts penetrate the formation shallower than the first inserts, advance with less resistance than the first inserts, or better resist irregular side impact loading than the first inserts. Accordingly, for this additional reason, Applicants submit that claims 23-25 and 47-49 are also patentably distinguished over the prior art.

During the course of these remarks, Applicant has at times referred to particular limitations of the claims that are not shown in the applied prior art. This short hand approach to discussing the claims should not be construed to mean that the other claimed limitations are not part of the claimed invention. They are as required by law. Consequently, when interpreting claims, each of the claims should be construed as a whole, and patentability determined in light of this required claim construction. The amendments to the claims have been made without prejudice to the Applicants pursuing broader claims in a continuing application.

Reconsideration of the claims and the allowance thereof is respectfully requested. Applicants respectfully suggest that the application has been placed in condition for allowance. Should the Examiner have any questions regarding the foregoing, please do not hesitate to contact the undersigned.

Respectfully submitted,

A handwritten signature in cursive script, reading "Sean Henkel", written over a horizontal line.

Sean C. Henkel
Reg. No. 44760
Smith International, Inc.
16740 Hardy Street
Houston, Texas 77032
(281) 233-5945
ATTORNEY FOR APPLICANT

Marked up version of amended claims

1. (thrice amended) A percussion drill bit for percussive drilling in a formation, comprising:
 - (a) a bit head for percussive impact against the formation;
 - (b) at least a first plurality of first inserts and a second plurality of second inserts extending from the bit head;
 - (c) each of the first inserts having a first base portion mounted to the bit head and a first exposed portion extending from the bit head, the first exposed portion having a first profile and a first contact area;
 - (d) each of the second inserts having a second base portion mounted to the bit head and a second exposed portion extending from the bit head, each of the second exposed portions having a second profile that is appreciably different from the first profile and a second contact area that is appreciable different from the first contact area of the first exposed portion, at least some of the second exposed portions enhanced with a superhard material.

- 26 (thrice amended) A percussion drill bit for percussion drilling in a formation, comprising:
 - (a) a bit head for percussive impact against the formation;
 - (b) at least a first plurality of first inserts and a second plurality of second inserts extending from the bit head;
 - (c) each of the first inserts having a first base portion mounted to the bit head and a first exposed portion extending from the bit head, the first exposed portion having a first profile and a first contact area and generally having a radius of curvature;
 - (d) each of the second inserts having a second base portion mounted to the bit head and a second exposed portion extending from the bit head, each of the second exposed portions having a second profile that is appreciably different from the first profile, generally having a radius of curvature and having a second contact area that is appreciably larger than the first contact area of the first exposed portion, at least some of the second exposed portions enhanced with a superhard material.

50. (thrice amended) A percussion drill bit for percussive drilling in a formation, comprising:

- (a) a bit head for percussive impact against the formation;
- (b) at least a first plurality of first inserts and a second plurality of second inserts extending from the bit head;
- (c) each of the first inserts having a first base portion mounted to the bit head and a first exposed portion extending from the bit head, each of the first exposed portions having a first contact area and a first profile, and each of the first base portions being generally cylindrical with a diameter;
- (d) each of the second inserts having a second base portion mounted to the bit head and a second exposed portion extending from the bit head, each of the second exposed portions having a second profile that is appreciably different than the first profile and having a second contact area that is appreciably larger than the first contact area, and each of the second base portions [being generally] being generally cylindrical with a diameter that is appreciably larger than the diameter of the first base portion, at least some of the second exposed portions enhanced with a superhard material.